Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1 (currently amended): A method of using power measurements from base stations to calculate position of a mobile station, the method comprising:

providing position coordinates for a plurality of base stations in a mobile phone network;

measuring Received Signal Strength Indicator (RSSI) levels of nearby base stations with a mobile station;

identifying three base stations for which the mobile station measures strongest RSSI levels;

the mobile station receiving the position coordinates of the three identified base stations;

calculating a curved path of possible positions of the mobile station for each of the three identified base stations according to the measured RSSI levels of each of the three identified base stations; and

calculating the position of the mobile station based on the position coordinates of the three identified base stations and the three curved paths of possible positions of the mobile station, wherein when the mobile station is less than a predetermined distance away from a nearby base station in the mobile phone network, the position of the mobile station is set to be equal to the position of the nearby base station.

2 (original): The method of claim 1 wherein calculating the curved path of possible positions of the mobile station for each of the three identified base stations is performed according to the relationship $RSSI_i \propto \frac{1}{d_i^2}$, wherein $RSSI_i$ stands for a

measured RSSI value for an i^{th} base station, and d_i stands for a distance between the mobile station and the i^{th} base station

3 (original): The method of claim 1 wherein when calculating the curved path of possible positions of the mobile station for each of the three identified base stations, a known interference coefficient for each base station is utilized to calculate an inner curve and an outer curve corresponding to that base station, the inner curve and the outer curve defining an individual area that the mobile station is predicted to be in.

4 (original): The method of claim 3 wherein a merged area that the mobile station is predicted to be in is calculated based on a union of the individual areas from each of the three identified base stations, the merged area comprising positions in which all of the individual areas overlap.

5 (original): The method of claim 3 wherein the known interference coefficients for each of the three identified base stations comprise a mean interference value and a corresponding standard deviation value that are used to calculate the inner curve and the outer curve corresponding to the same base station.

6 (original): The method of claim 1 wherein each base station has a corresponding reliability coefficient due to interference effects associated with that base station, and when identifying the three base stations for which the mobile station measures the strongest RSSI levels, base stations which have a reliability coefficient below a predetermined threshold level are not selected to be one of the three base stations that the mobile station identifies as having the strongest RSSI levels.

7 (original): The method of claim 1 wherein the mobile station receiving the position coordinates of the three identified base stations is realized by the three identified

base stations transmitting their respective position coordinates to the mobile station.

8 (original): The method of claim 1 wherein the mobile station receiving the position coordinates of the three identified base stations is realized by the mobile station reading the positions coordinates of the three identified base stations from a lookup table.

9 (cancelled).

10 (original): A method of using power measurements from base stations to calculate position of a mobile station, the method comprising:

providing position coordinates for a plurality of base stations in a mobile phone network;

measuring Received Signal Strength Indicator (RSSI) levels of nearby base stations with a mobile station;

identifying three base stations that have a reliability coefficient above a predetermined threshold level for which the mobile station measures strongest RSSI levels, wherein each base station has the corresponding reliability coefficient due to interference effects associated with that base station;

the mobile station receiving the position coordinates of the three identified base stations;

calculating a curved path of possible positions of the mobile station for each of the three identified base stations according to the measured RSSI levels of each of the three identified base stations; and

calculating the position of the mobile station based on the position coordinates of the three identified base stations and the three curved paths of possible positions of the mobile station. .

11 (original): The method of claim 10 wherein calculating the curved path of possible positions of the mobile station for each of the three identified base stations is performed according to the relationship $RSSI_i \propto \frac{1}{d_i^2}$, wherein $RSSI_i$ stands for a measured RSSI value for an i^{th} base station, and d_i stands for a distance between the mobile station and the i^{th} base station

12 (original): The method of claim 10 wherein when calculating the curved path of possible positions of the mobile station for each of the three identified base stations, a known interference coefficient for each base station is utilized to calculate an inner curve and an outer curve corresponding to that base station, the inner curve and the outer curve defining an individual area that the mobile station is predicted to be in.

13 (original): The method of claim 12 wherein a merged area that the mobile station is predicted to be in is calculated based on a union of the individual areas from each of the three identified base stations, the merged area comprising positions in which all of the individual areas overlap.

14 (original): The method of claim 12 wherein the known interference coefficients for each of the three identified base stations comprise a mean interference value and a corresponding standard deviation value that are used to calculate the inner curve and the outer curve corresponding to the same base station.

15 (original): The method of claim 10 wherein the mobile station receiving the position coordinates of the three identified base stations is realized by the three identified base stations transmitting their respective position coordinates to the mobile station.

16 (original): The method of claim 10 wherein the mobile station receiving the position

coordinates of the three identified base stations is realized by the mobile station reading the positions coordinates of the three identified base stations from a lookup table.

17 (original): The method of claim 10 wherein when the mobile station is less than a predetermined distance away from a nearby base station in the mobile phone network, the position of the mobile station is set to be equal to the position of the nearby base station.